Claim Amendments

1-10. (Cancelled)

11. (Original) An oscillatory neurocomputer comprising:
a number n of oscillating elements;
a source of a rhythmic forcing input;
a medium interconnecting the source of rhythmic forcing input to each oscillating element;
each oscillating element having an oscillating frequency,
the oscillating frequency f_1 of at least one of the oscillating elements differing from the oscillating frequency f_2 of at least one other of the oscillating elements,
the source of a rhythmic forcing input producing an input of a third frequency f_3, establishing communication between the at least one oscillating element and the at least one other oscillating element.

12. (Original) An oscillatory neurocomputer according to claim 11, wherein f_3 is substantially the difference between f_1 and f_2.

13-14. (Cancelled)

15. (Original) An oscillatory neurocomputer according to claim 11, wherein the oscillating elements are electronic oscillators, the source of a rhythmic forcing input is a function generator and the interconnecting medium is an electrically conductive medium electrically connecting the source of a rhythmic forcing input to the oscillators.

16. (Original) An oscillatory neurocomputer according to claim 15, wherein the function generator provides a forcing signal having a carrier frequency and information content modulating the carrier frequency, the oscillators responding to the impression of the forcing signal onto the conductive medium to produce information content modulation substantially the same as that of the conductive medium.

17. (Original) An oscillatory neurocomputer according to claim 11, wherein the number n of oscillating elements is greater than two, a first subset of the oscillating elements

communicate at a frequency f_3 of rhythmic forcing input from the source, and at least one second subset of the oscillating elements communicate at least one further frequency f_4 of rhythmic forcing input from the source.

18. (Original) An oscillatory neurocomputer according to claim 15, wherein content varying one oscillator from its oscillating frequency is communicated to and varies from its oscillating frequency another oscillator in communication with the one oscillator.

19. (Original) A neurocomputer including:

a) an array of oscillators, at least a plurality of said oscillators having differing frequencies,

b) a common conducting medium connected to each of the plurality of oscillators,

c) a source connected to the conducting medium to impart oscillator signals of various frequencies to the conducting medium, the signals of various frequencies including frequencies effective to bring two or more of the oscillators into communication.

20. (Original) An oscillatory neurocomputer according to claim 19, wherein the oscillators include feedback circuits connected with the medium.

21. (Original) An oscillatory neurocomputer according to claim 20, wherein the oscillators are phase locked loops.

22. (Original) A method of enabling communication of a characteristic between a first processing element oscillating at a first frequency and a second processing element oscillating at a second frequency different from the first frequency, the method comprising the steps of:

operably coupling the first element to a medium;

operably coupling the second element to said medium;

operably coupling said medium to a rhythmic input; and

causing said rhythmic input to oscillate said medium at a third frequency.

23. (Original) The method of claim 22, wherein:

said third frequency comprises a frequency substantially equal to the difference between the first frequency and the second frequency.

24. (Original) A method of enabling communication of a characteristic between a plurality of n oscillating processing elements comprising the steps of:

operably coupling each of the plurality of n elements to a corresponding one of a plurality of no more than n connectors;

operably coupling each one of said connectors to a conductive medium; and

operably coupling said medium to a rhythmic input.

25. (Cancelled)

26. (Previously Presented) A neurocomputer comprising:

(a) n processing elements including n oscillators having differing frequencies,

(b) a common medium,

(c) only n connective junctions coupling n inputs of the n processing units to the common medium, and

(d) a rhythmic external forcing input coupled to the common medium to impart an oscillatory input to the medium and via the medium to the processing elements, whereby any two oscillators of differing frequency communicate when the frequency spectrum of the oscillatory input imparted by the rhythmic external forcing input includes a frequency equal to the difference between the frequencies of the two oscillators.

27. (Previously Presented) The neurocomputer of claim 26, wherein the common medium comprises a unitary body.

28. (Previously Presented) The neurocomputer according to claim 27, wherein the unitary body is an electrically conductive body.

29. (Previously Presented) The neurocomputer according to claim 26, wherein the common medium is comprised of multiple connected bodies.

30. (Previously Presented) The neurocomputer according to claim 29, wherein the multiple connected bodies are electrically conductive bodies electrically interconnected.

31. (Previously Presented) The neurocomputer according to claim 26, wherein the oscillators comprise phase-locked loops.

32. (Previously Presented) The neurocomputer according to claim 31, wherein the phase-locked loops comprise a phase detector, operatively connected to a low-pass filter and a voltage controlled oscillator.

33. (Previously Presented) The neurocomputer according to claim 31, wherein each processing elements further comprise a frequency multiplier operatively connected between the common medium and the phase-locked loop.

34. (Previously Presented) The neurocomputer according to claim 32, wherein the processing elements further comprise a frequency multiplier operatively connected between the common medium and the phase-locked loop, and at least one interconnection operatively connecting an output of the voltage controlled oscillator of the phase-locked loop of one processing element to the frequency multiplier of another processing element.

35. (Previously Presented) The neurocomputer according to claim 34, further comprising a further interconnection operatively connecting the voltage controlled oscillator of the another processing element and the frequency multiplier of the one processing element.

36. (Previously Presented) The neurocomputer according to claim 33, wherein the processing elements further comprise a band-pass filter operatively connected between the frequency multiplier and the phase-locked loop.

37. (Previously Presented) The neurocomputer according to claim 36, wherein the processing elements further comprise an amplifier operatively coupled between the band-pass filter and the phase-locked loop.

38. (Previously Presented) The neurocomputer according to claim 28, wherein the frequency multipliers are additional phase-locked loops configured to be frequency multipliers.

39. (Previously Presented) The neurocomputer according to claim 34, wherein the rhythmic external forcing input comprises an information signal modulating a carrier frequency signal.

40. (Previously Presented) The neurocomputer according to claim 31, wherein the rhythmic external forcing input comprises an information signal having a frequency outside the capture range of the phase-locked loops modulating a carrier frequency signal.

41. (Previously Presented) The neurocomputer according to claim 26, further comprising an adder circuit operably connected in a feedback path from outputs of the processing elements to the common medium.

42. (Previously Presented) A neurocomputer comprising:

(a) a multiple number n of means for processing, including;

(i) a number n of means for receiving inputs to the means for processing,

(ii) means for oscillating at differing frequencies,

(iii) means for providing outputs from the means for processing,

(b) means for producing a rhythmic input,

(c) a single means connected with an output of the rhythmic input producing means for providing a common connection from the rhythmic input producing means to the n means for receiving inputs to the means for processing, and

(d) the means for producing a rhythmic input comprising means for producing inputs having frequency components that are the differences of frequencies of two or more of the means for oscillating of the means for processing.

43. (Previously Presented) The neurocomputer according to claim 42, further comprising means for multiplying a frequency of the means for producing a rhythmic input by a frequency of an oscillating means of one of the means for processing and for applying frequency multiplication as an input to at least one other of the means for processing.

44. (Previously Presented) The neurocomputer according to claim 42, further comprising means for adding frequencies of outputs of the means for processing and means for applying the added frequencies as feedback to the means for producing a rhythmic input.

45. (Previously Presented) A method of neurocomputing comprising:

(a) providing n processing elements including n oscillators having differing frequencies;

(b) providing a common medium;

(c) coupling n inputs of the n processing units to the common medium with only n connective junctions;

(d) applying a rhythmic external forcing input to the common medium to impart an oscillatory input to the medium and via the medium to the processing elements;

(e) effecting communication between at least two of the n processing elements by providing in the oscillatory input a frequency spectrum that includes a frequency equal to the difference between the frequencies of the at least two oscillators.

46. (Previously Presented) The method of neurocomputing according to claim 45, wherein step (b) comprises providing a unitary body, and step (c) comprises coupling n inputs of the n processing units to the unitary body.

47. (Previously Presented) The method of neurocomputing according to claim 46, wherein providing a unitary body comprises providing an electrically conductive body.

48. (Previously Presented) The method of neurocomputing according to claim 45, wherein step (b) comprises providing multiple connected bodies.

49. (Previously Presented) The method of neurocomputing according to claim 48, wherein providing multiple connected bodies comprises providing multiple electrically connected electrically conductive bodies.

50. (Previously Presented) The method of neurocomputing according to claim 45, wherein step (a) comprises providing as the processing elements phase detection of inputs to the processing elements.

51. (Previously Presented) The method of neurocomputing according to claim 50, wherein providing phase detection comprises providing phase-locked loops as the processing elements.

52. (Previously Presented) The method of neurocomputing according to claim 45, further comprising multiplying the rhythmic external forcing input by a signal having the frequency of at least one of the oscillators of at least one of the processing elements to form a multiplied output, and applying the multiplied output as an input to at least another of the oscillators of at least another of the processing elements.

53. (Previously Presented) The method of neurocomputing according to claim 45, further comprising adding together outputs of the processing elements and applying the added together outputs as feedback to the common medium.

54. (Previously Presented) The method of neurocomputing according to claim 52, further comprising filtering the multiplied output with a band pass filter prior to applying the multiplied output to the at least another oscillator.

55. (Previously Presented) The method of neurocomputing according to claim 45, wherein step (d) comprises modulating a carrier signal with an information signal.